

# DECISION-MAKING VS. PILOT JUDGEMENT

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The most versatile and valuable component of the aviation system is the human factor. However, it is also the most susceptible to influences that can negatively affect safety and performance. To receive total benefit out of the system, every aspect of the human factor must be involved, including performance behavior. The three most important behavioral traits pilots must possess to be professional in their duties include skill, knowledge, and judgement.

Issues of pilot judgement and aeronautical decision-making have recently become a concern of private research facilities, the FAA, and NASA. As a result, studies have been conducted and compiled into manuals designed to help improve a pilot's ability to recognize and control hazardous thought patterns and situations. This article is a recap of what was discovered.

## **Judgement vs. Decision-Making: What's the Difference?**

It is important to understand the differences between exercising judgement and making a decision. The terms are not interchangeable. The formal definition of a decision is simply, "The act of reaching a conclusion or making up one's mind." When a decision is made, it is not always the right one. On the other hand, the formal definition of judgement is "The mental ability to perceive and distinguish between alternatives. The capacity to make a reasonable deci-

sion." In the aviation context, good judgement essentially becomes the ability to make an instant decision that assures the safest possible continuation of the flight, better yet, the correct decision.

Since a judgement decision involves perceiving and distinguishing between correct and incorrect, each person's individual thought process determines his or her ability to assess risk and make a judgement decision. Therefore, it is important to take a closer look at how one's attitude toward risk taking and ability to evaluate potential consequences may effect a judgement decision.

According to Transport Canada's Judgement Training Manual, "Pilot judgement is the process of recognizing and analyzing all available information about one's self, the aircraft and the flying environment, followed by the rational evaluation of alternatives to implement a timely decision which maximizes safety." If a pilot learns how to perceive, observe, detect and understand a situation, he or she will be more prepared to choose the best alternative while under stress or time constraint. The best way to prepare one's self for this type of decision making is to be aware of thoughts and attitudes that may adversely affect the situation.

### **DECIDE Model**

The DECIDE model is another tool developed to assist pilots in making a critical decision. While following the DECIDE model, a pilot is required to contemplate the outcome of an action to ensure the safety of the aircraft and its passengers.

- D** - detect change
- E** - estimate the significance of the change
- C** - choose the outcome objective
- I** - identify plausible alternatives
- D** - do the best action
- E** - evaluate the progress

Using the DECIDE process requires the pilot to contemplate the outcome of the action taken. A successful outcome should be the action that causes no damage to the aircraft or injury to passengers.

### **Judgement Chain**

The judgement chain phenomenon occurs when one poor decision increases the probability of another. As the chain grows, the probability of a safe flight decreases. To break the chain, the pilot must identify the combination of events that may result in an accident and properly deal with the situation in time to prevent the accident from occurring. Essentially, a pilot must forecast which events must be

omitted or committed to avoid the situation.

### **In the End**

In the end, all pilots are expected to follow regulations, SOPs, and operate the aircraft safely, but most importantly they should act responsibly and exercise good judgement. Decision-making with good judgement is an ongoing process that begins before take-off and does not end until the aircraft is safely parked at the gate. A

respect for flying combined with learned judgement skills may greatly enhance a pilot's chance of having a long and safe career.

*Research: Amanda Maresh*

*Sources Consulted: Krouse, Shari Stamford. (1996) Aircraft Safety. New York, NY, McGraw Hill Companies, Inc. Flight Performance: Human Factors Section 6, <http://www.allstar.fiu.edu/aero/HumFac06.htm>. 21 Jul 99.*